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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,028	09/28/2001	Simon Dodd	10013432 -1	4221

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER	
BROOKE, MICHAEL S	
ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/967,028	Applicant(s) DODD, SIMON	
	Examiner Michael S. Brooke	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 29-37 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-11 and 29-37 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 28 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kneezel et al. (5,881,451).

Kneezel teaches an ink jet print head having a thermal sense resistor (R_t). The resistor is coupled to a fusible shoring bar (30), which to modifies the resistance of the thermal sense resistor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-9, 24 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuber et al. (6,196,651) in view of Kneezel et al. (5,881,451).

With respect to claim 1, Zuber teaches a replaceable ink cartridge having a thermal sense resistor (TSR)(16), which has a first resistance.

With respect to claim 2, Zuber teaches a memory for storing the resistance value of the TSR (col. 3:54-67 and col. 4:1-2).

With respect to claims 4-6, 26 and 27, Zuber teaches that the stored resistance value represents information concerning the lifetime of the print head (col. 9:35-60). Since this information is unique to the print head, this information would be print head uniqueness information.

With respect to claims 7 and 8, Zuber teaches that the print head and print cartridge are replaceable (col. 9:57 and col. 10:23-24).

With respect to claim 24, Zuber teaches an ink jet head assembly, an ink supply (6), a TSR (16), a memory and a controller (14) that is coupled to the memory and determines the temperature of the head based on the stored resistance value (col. 6:10-65).

Zuber teaches the claimed invention with the exception of the TSR being coupled to a resistance modifier and the resistance modifier being a conductor for shorting a portion of the TSR.

Kneezel teaches Kneezel teaches an ink jet print head having a thermal sense resistor (TSR) (R_t). The resistor is coupled to a fusible shoring bar (30), which modifies the resistance of the thermal sense resistor. This enables the accuracy of the TSR to be increased; thereby enabling a more accurate determination of the print head temperature (col. 5:4-10).

It would have been obvious to one of ordinary skill in the ink jet art, at the time the invention was made, to have provided Zuber with a TSR that is coupled to a

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resistance modifier that is a conductor that shorts a portion of the TSR, for the purpose of increasing the accuracy of the TST to enable a more accurate determination of the print head temperature, as taught by Kneezel.

Claims 3 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuber et al. (6,196,651) in view of Kneezel et al. (5,881,451), as applied to claims 1, 2, 4-9, 24 and 26-28 above, and further in view of Cowger (6,012,508).

Zuber, as modified, teaches the claimed invention with the exception of the memory being a ROM.

Cowger teaches that it is conventional in the ink jet art to use a ROM as a memory in a replaceable consumable, such as an ink cartridge (col. 3:39-52).

It would have been obvious to one of ordinary skill in the ink jet art, at the time the invention was made, to use a ROM as the memory of Zuber, as modified, for the purpose of storing information relating to the replaceable ink cartridge in a well known manner, as taught by Cowger.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuber et al. (6,196,651) in view of Kneezel et al. (5,881,451), as applied to claims 1, 2, 4-9, 24 and 26-28 above, and further in view of Mulay et al. (6,398,333).

Zuber, as modified, teaches the claimed invention with the exception of the TSR having a serpentine shape having a plurality of transition regions and the modifier being positioned near at least one of the transition regions.

Mulay teaches that it is preferable to use a TSR with a serpentine shape in an ink jet print head (col. 3:11-15). This shape reduces the overall length of the TSR. The portions where the TSR curves are transition regions

It would have been obvious to one of ordinary skill in the ink jet art, at the time the invention was made, to have provided Zuber, as modified, with a serpentine shaped TSR, for the purpose of reducing the overall length of the TSR and for producing a print head in a desired fashion, as disclosed by Mulay.

With respect to claim 11, the combination of Zuber, as modified, and Mulay would result in a TSR having a plurality of different size resistor portions that are arranged in a serpentine fashion. A shorting bar (30) would be connected to the pad portions that are disposed between the resistor portions. The shorting bar would be connected in the same vicinity as the transition regions, and thus would be near at least one of the transition regions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. Brooke whose telephone number is (571) 272-2142. The examiner can normally be reached on M-F from 5:30 AM-2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael S. Brooke
Primary Examiner
Art Unit 2853

MSB
05/21/04